Hydro Station

Compact and Portable Pure Water System

OWNERS MANUAL

The Hydro Station is a compact and portable Pure Water Cleaning System. It can be mounted in an open or enclosed trailer. The Hydro Station has the unique ability to produce a high volume of pure water for multiple remote applications.

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System Overview

The following information is provided to help you understand how the system operates.

- The RO process is not a filtration process but more of a separation process. As the feed water moves through the membrane, H2O molecules permeate the film and are collected in the center core tube. The balance of the feed water will become more concentrated with dissolved solids and are discharged as waste. A portion of this waste is recycled back to the tank for a more efficient use of water
- Pure water production volume on any Reverse Osmosis system is temperature dependant. Colder feed water, i.e. the late fall, winter and early spring will produce a lower volume (gpm) of pure water. Warmer water, i.e. late spring, summer and early fall will produce a higher volume (gpm) of pure water.
- The reverse osmosis (RO) portion of this system will remove 98% of the total dissolved solids (TDS) from the feed water. If your water supply is 200 parts per million (ppm), then the RO product water will be 4 ppm. If your supply water is 700 ppm, then your RO water will be 14 ppm.
- The RO product water then flows through an optional housing containing deionizing (DI) resin which removes the balance of the dissolved solids, giving you water at 0 ppm TDS. The DI resin acts like sponge that absorbs dissolved solids. Once it is full, it has to be replaced.
- The Hydro Station machine uses a gasoline engine powered positive displacement pump with a suction feed. The feed water is carried in a transportable tank. The pump pulls water from the tank, boosts it up to 160 psi as feed water to the membranes.
- The Hydro Station pump system can also be used as a high flow pressure cleaning system. The high flow medium pressure provides great surface impact with high flush volume for superior cleaning.
- The combination Carbon/Sediment filter removes all solid particles larger than 5 microns in size and the chlorine from the feed water. Chlorine will damage the RO membranes and make them ineffective. The carbon block can only hold a finite amount of chlorine. It must be replaced after 40,000 gallons of feed water have passed through it.
- Short term and long term storage is an important issue. The system must be protected from algae and bacteria growth in the pressure vessels caused by stagnant water. The membranes and DI resin must not be allowed to dry out either. Drain the water from the storage tank if unit is not to be used again within 48 hours. Please see the Storage section in this manual for proper instructions. The unit must be protected from freezing.

Multi Pole Operation:

The water flow to each pole/brush is affected by hose length, hose diameter and vertical height differences between the two poles. Water flows to the path of least resistance, so the pole setup with the shorter hose and/or shorter pole will get more of the water flow. Use ball valves at the end of the hoses to regulate andbalance the flow between the poles.

SPECIFICATIONS	HYDRO STATION I	HYDRO STATION II	HYDRO STATION III
RO Membranes	(1) 4 x 40	(2) 4 x 40	(3) 4 x 40
RO Product Water Flow (gpm)	2 gpm	4 gpm	6 gpm
RO Feed Water Pressure (psi)	160 psi	160 psi	160 psi
RO Feed Water Flow (gpm)	4 gpm	10 gpm	12.2 gpm
Waste Water Flow (gpm)	1 gpm	2 gpm	3 gpm
Pump Suction Hose	1" ID	1-1/2" ID	1-1/2" ID
Pump	AR Direct Drive	AR Direct Drive Gear Box	AR Direct Drive Gear Box
Tank Feed Required	No	Yes	Yes
Gas Engine (hp) Honda	GX160 (5.5 hp)	GX290 (9hp)	GX290 (9hp)
Pressure Cleaning	3.5 gpm @ 1750psi	8.8gpm @ 1500psi	10.8gpm @ 1100psi
Weight (lbs)	185 lbs	279 lbs	315 lbs
Deionized Resin Filter	Yes	No	No
Chemical Injector	Yes	Yes	Yes
Hose Reel Mounts	3	3	3

Part Number	Description
HS-1	Hydro Station I
HS-2	Hydro Station II
HS-3	Hydro Station III
Options Available	
BD500102	Hose Reel, pure water low pressure 166', 3/8" safety yellow hose
HS-LPH-50	Hose Reel, feed water 50', 3/4" commercial black garden hose
HS-PWK	Hose Reel pressure washer kit with 100', 3/8" high pressure hose, lance, gun & nozzles
HS-FLOAT	Float valve assembly for tank filling
HS-TCK	Tank connection kit
HS-CHEMKIT	Chemical tank kit 7 gallon
HS-ANTISCALE	Anti-scale injection system HS3 and HS3 only
HS-325TANK	325 Gallon Tank Trailer with single axel (additional freight required)
HS-325DUAL	325 Gallon Tank Trailer with double axel (additional freight required)
HS-525TANK	525 Gallon Tank Trailer with double axel (additional freight required)
HS-725TANK	725 Gallon Tank Trailer with double axel (additional freight required)
HS-INSTALL	Hydro Station Tank Trailer Installation (required with tank trailer purchase)

New System Installation/Setup

The Hydro Stations are available in many configurations to allow maximum flexibility for customer installation.
Systems purchased complete with tank trailers will already have these items completed.

Caution:
- Care should be taken when placing/securing equipment and tank to ensure proper weight distribution and balanced load.
- Follow guidelines from tank manufacturer for proper method of securing tank for transportation.
- Check and follow all local, state and federal requirements for trailer load ratings, brakes, safety equipment, registration and licensing.

Mounting HS frame to trailer/vehicle
There are (4) - 3/8" holes in the frame, one in each corner. Use these holes to secure unit with (4) – 3/8-16 Grade 8 bolts with locking type nuts, to the frame or support member on the trailer/vehicle. New holes may be drilled through frame for proper alignment to structural members on vehicle/trailer.

Inlet plumbing, Tank to Pump
- Minimize the number of bends in hose as well as 90° elbows. Straight runs with sweeping bends are preferred.
- Hose and fittings on the entire inlet system must be recommended size or larger to ensure proper pump performance and longevity.
  - HS1 requires 1 inch hose and pipe fittings.
  - HS2 & HS3 requires 1 ½ inch hose and pipe fittings.
- Install a shutoff valve at the tank outlet.
- Install an inline strainer with a 200 mesh screen.

Return lines to tank
- Install a bulkhead fitting above the highest water level mark on the tank.
- Attach a ½" hose barb to bulkhead fitting.
- Connect the hose from the 2 pressure regulating valves to the hose barb, Secure with a clamp.

Reverse Osmosis System Operation

Pre-operation Setup

1. Fill tank with more than enough water to complete job.
2. Position equipment on a level surface at the best location for the job.
3. Fill gas engine with regular unleaded gasoline.
4. Check oil level on gas engine.
5. Check oil site glass on pump.

Startup

1. Open **Tank** outlet valve.
2. Place end of **Waste Water** hose to direct flow to desired area.
3. Open **Flush** valve.
4. Squeeze trigger handle on pressure washer gun to relieve any built up pressure (if applicable).
5. Close **Pressure Washer** ball valve which leads to the pressure washer hose.
6. Open **Reverse Osmosis** feed water ball valve.
7. Start Gas engine.
   a. Check oil level.
   b. Turn **Fuel** valve lever to **ON** position.
   c. Set **Choke** lever to full **ON** position.
   d. Set **Throttle** lever to **half** way position.
   e. Turn Ignition switch to the **ON** position.
   f. Pull start rope.
      i. Once engine has started, let run for 5 seconds, then move **Choke** lever to **OFF** position.

   Note: Cold weather may require half choke for up to 30 seconds.

      ii. Allow to run for 1 minute at half throttle so engine can warm up.

   g. Check for water flow from flush hose.
      i. **Warning!** DO not allow engine to run for more than 1 minute without water flow from flush hose. Shutdown engine and locate reason for no water flow. (Check tank outlet valve, strainer, correct position of all valves, water level, kinks in suction line, etc…..)

   h. Move **Throttle** lever to wide open position.
8. Slowly close **Flush** valve.
   a. Read pressure on gauge next to Reverse Osmosis feed water ball valve.
      i. It should indicate **140 – 160 psi.**
9. Open ball valve on the end of a **Pure Water** discharge line on one of the hose reels. Allow water to flow for 1 minute.
   a. Test TDS level with hand held meter.
      i 0 – 15 ppm is the range for spot free window/solar panel cleaning.
10. Wash windows/solar panels or any other hard surface requiring spot free cleaning.

Shutdown

1. Open **Flush** valve.
   a. Allow water to flow through flush line for 1 minute. This will flush clean, or lower the TDS level inside the membranes which greatly extends the service life of the membranes.
2. Stop gas engine.
   a. Turn ignition switch to **OFF** position
   b. Turn fuel valve lever to **OFF** position
3. Close **Flush** valve.
4. Windup **Waste Water** hose and secure for transport.
5. Windup all hose reels and secure, lock down for transport.

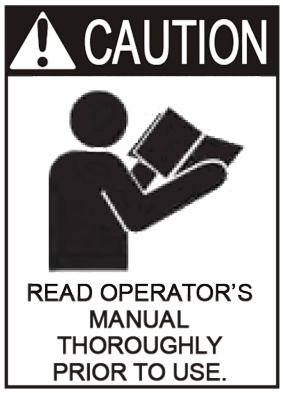
Transportation & Storage

1. If next expected use for system is more than 48 hours:
   - Drain tank completely prior to transportation
   - Leave cover off tank for 24 hours if possible to allow it to dry inside
2. Make sure all hoses are secured prior to transportation
3. Lock all hose reels

Pressure Washer Safety Instructions

HIGH PRESSURE SPRAY CAN CAUSE SERIOUS INJURY

Never point or aim the gun/wand at yourself or anyone else.
Never put your hand, fingers or body directly in front of the spray nozzle.



A. KNOW YOUR EQUIPMENT

READ YOUR OWNERS MANUAL CAREFULLY.

Do not operate your Hydro Station until you completely understand and can follow all operating instructions, precautions and safety rules. Restrict the use of your Hydro Station to users who have read, understand and can follow all operating instructions, precautions and safety rules.

B. PLAN AHEAD

1. Always wear ear protection to cut noise and eye protection and / or face shield to prevent debris from flying or ricocheting into eyes and face which could result in serious injury.
2. Dress safely in long pants and wear boots or shoes. Other protective equipment is advisable when using chemicals, cleaning detergents or other corrosive or abrasive substances.
3. Do not operate your Hydro Station if you have consumed alcohol or taken medication.
4. Keep pets, children and bystanders a safe distance away from your work area. A minimum of 50 feet is recommended.
5. Do not spray directly at glass or fragile objects.
6. CAUTION after turning off your Hydro Station and water supply, there is still high pressure water trapped in the system. You must release the pressure by triggering the gun after the engine/motor has completely stopped.
7. Know what chemicals you are using and read precautions.

PRECAUTIONS FOR GASOLINE ENGINES/ELECTRIC MOTORS

Follow all safety precautions, operating procedures and maintenance listed in your engine operator's manual which came with the pressure cleaner. This manual may be attained from your local small engine repair center.

DO NOT fill the engine with gasoline when the engine is running, hot or near an open flame. **DO NOT SMOKE.**

DO NOT run Hydro Station in an enclosed area. Exhaust fumes contain poisonous carbon monoxide gas. Breathing exhaust gases can cause serious illness or death.

DO NOT touch or come in contact with hot mufflers, cylinders, cooling fins or hot exhaust gases as this may result in severe burns.
Never tamper with governor spring, governor links or other components which may increase the speed (RPM) of the engine.

DO NOT operate your Hydro Station in the presence of flammable vapors or gases. When servicing pressure cleaning equipment, be sure to properly dispose of any flammable materials.

DO NOT make adjustments to your equipment without first removing the spark plug.

When transporting your Hydro Station, the fuel shut-off must be in the OFF position, to prevent fuel from spilling out and/or flooding the engine.

Pressure Washer System Operation

Pre-operation Setup

1. Fill tank with more than enough water to complete job.
2. Position equipment on a level surface at the best location for the job.
3. Fill gas engine with regular unleaded gasoline.
4. Check oil level on gas engine.
5. Check oil site glass on pump.

Startup

1. Open **Tank** outlet valve.
2. Open Pressure Washer ball valve which leads to the high pressure hose.
3. Close Reverse Osmosis feed water ball valve.
4. Remove QD nozzle from the end of the spray wand. This will help prevent plugged nozzles.
5. Squeeze trigger handle on pressure washer gun to relieve any built up pressure.
6. Start Gas engine.
    a. Check oil level.
    b. Turn **Fuel** valve lever to **ON** position.
    c. Set **Choke** lever to full **ON** position.
    d. Set **Throttle** lever to **half** way position.
    e. Turn Ignition switch to the ON position.
    f. Pull start rope.
        i. If engine is hard to pull over, hold trigger gun open to relieve pressure during starting. Release after engine has started.
        ii. Once engine has started, let run for 5 seconds, then move Choke lever to OFF position. Note: Cold weather may require half choke for up to 30 seconds.
    g. **Warning!** DO not allow engine to run for more than 30 seconds without any water flow from spray wand. Shutdown engine and locate reason for no water flow. (Check tank outlet valve, strainer, correct position of all valves, water level, kinks in suction line, etc…..)
7. Squeeze trigger on spray gun. Allow water to flow for 10 seconds to flush any contaminates from system.
    a. **Warning!** DO not allow engine to run for more than 1 minute without any water flow from spray wand. Shutdown engine and locate reason for no water flow. (Check tank outlet valve, strainer, correct position of all valves, water level, kinks in suction line, etc…..)
8. Move **Throttle** lever to wide open position.
9. Install QD nozzle of choice onto the end of the spray wand.
10. Pressure clean desired surfaces.

Shutdown

1. Stop gas engine.
    a. Turn Ignition switch to **OFF** position.
    b. Turn Fuel valve lever to **OFF** position.
2. Squeeze trigger on spray gun to relieve pressure.
3. Close **Pressure Washer** ball valve that leads to high pressure hose
4. Windup high pressure hose and secure for transport.
5. Place spray wand in storage tube.

Transportation & Storage

1. If next expected use for system is more than 48 hours:
    - Drain tank completely prior to transportation
    - Leave cover off tank for 24 hours if possible to allow it to dry inside
2. Make sure all hoses are secured prior to transportation
3. Lock all hose reels

Maintenance

Hour meter/tachometer

- A combination hour meter/ tachometer is installed on the engine.
  - Total run time is displayed when engine is not running.
  - Tachometer shows engine speed in RPM (revolutions per minute).
    - Automatically goes into tachometer mode when engine starts running.
  - Service Flash Alerts
    - At 100 hours, service flash alert with indicate time for engine oil change.
    - Reset Service flash alert after oil change by holding down button for 5 seconds.
  - Toggle between screens for viewing by pressing button.

Reverse Osmosis System

- Flush membranes at the end of each work day.
- Replace Carbon/Sediment filter cartridge every 30,000 gallons of feed water.
- Replace DI resin cartridge when TDS level exceeds 15 ppm.

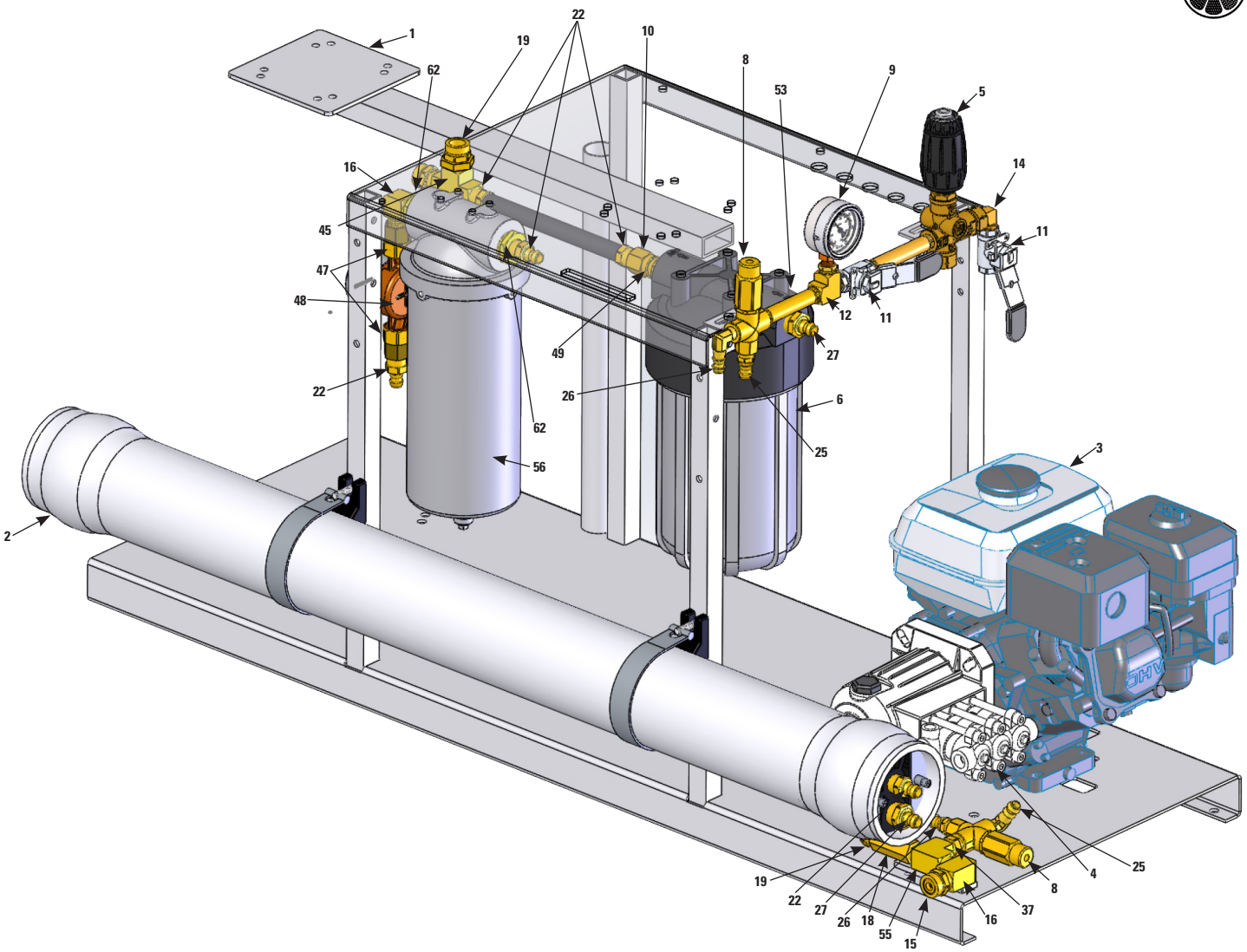
Pump

- Change crankcase oil
  - Use Pump Crankcase only. Available from any pressure washer service center.
  - Initial after 50 hrs. (new pumps contains special break in oil)
  - Every 500 hours after that.
- Daily visual checks:
  - Proper oil level – visually check site glass.
  - Oil condition – visually observe oil in sight glass. Look for milky or metallic appearance.
  - Inspect pump for water leakage between brass manifold and crankcase. Water dripping from this location indicates inlet seal wear and should be serviced. Prolonged leakage will result in water entering crankcase and contaminating the oil, giving it a milky appearance.

Honda Engine

- Read Honda Owner's manual included with this manual.
- Change crankcase oil.
  - Use 10w-30 oil under normal conditions. See Honda manual for other operating condition oil recommendations.
  - Every 100 hours of operation.
  - Hour meter has a service alert to indicate service is due.
  - Reset alarm after oil change by holding in button on the hour meter for 5 seconds.
- Clean and change air filter every 100 hours.
- Engine warranty and/or service work may be provided by any authorized Honda service center.

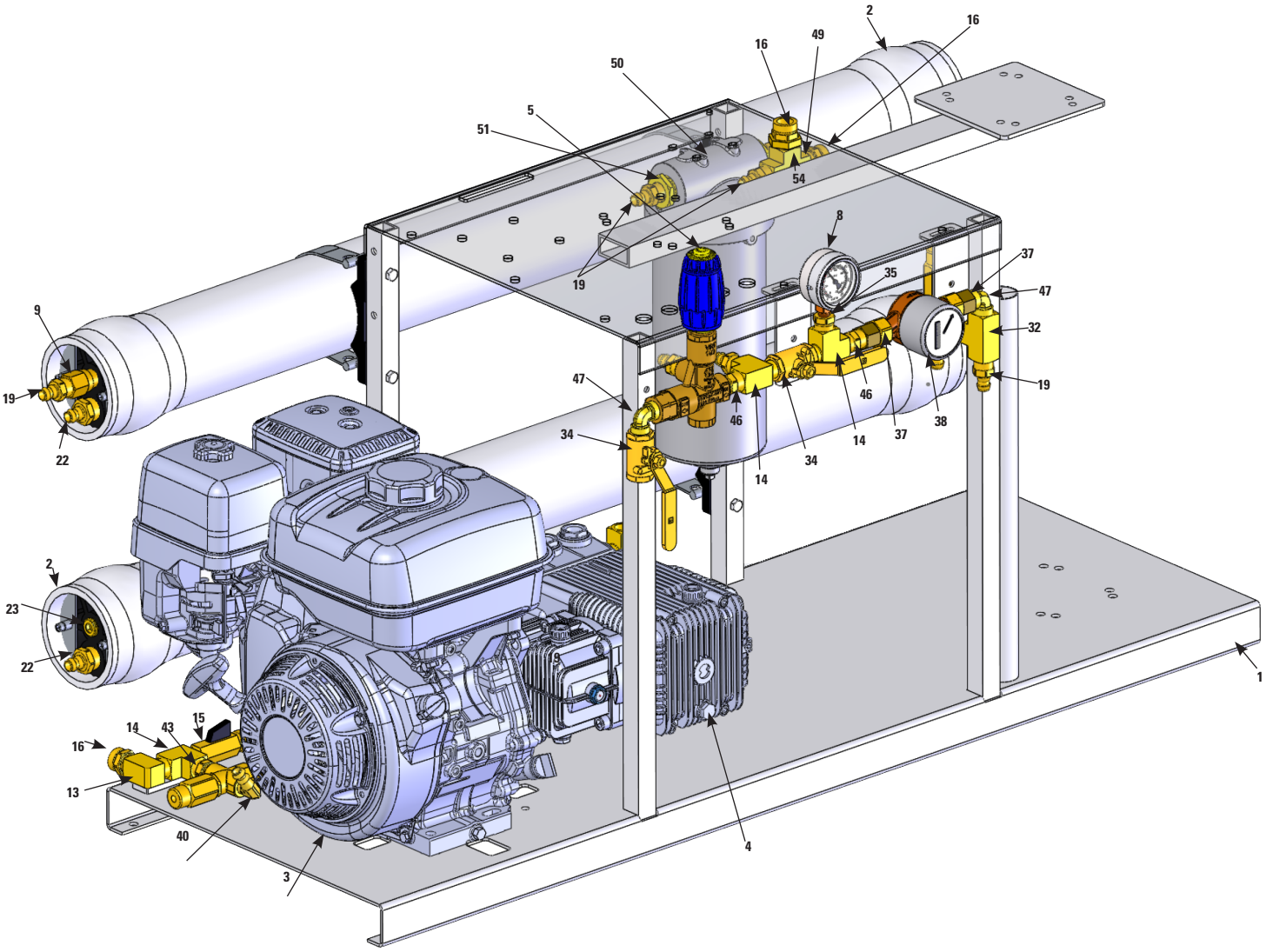
HS1 Bill of Materials



Item Number	Part Number	Description	Qty	U/M
1	BD555115	HYDROSTATION FRAME VER.2	1	EA
2	BD555034	FIBERGLASS PRESSURE VESSEL4X40	1	EA
3	BD555033	HONDA ENGINE FOR HYDROSTATION	1	EA
4	BD555118	PUMP, HS-1 VER 2, A/R	1	EA
5	BD555119	UNLOADER VALVE, A/R HS-1 PUMP	1	EA
6	BD505025	BIG GREY FILTER HOUSING 4 X 10	1	EA
7	BD545132	RO MEMBRANE HYDROTUBE	1	EA (NOT SHOWN)
8	BD515123	BALANCED RELIEF VALVE 3 PORT	2	EA
9	BD515240	PRESSURE GUAGE 0-300 LIQUID FI	1	EA
10	BD515220	CHECK VALVE, 1/2" NPT MALE	1	EA
11	BD515239	BALL VALVE, 3/8 NPT HIGH PRESS	2	EA
12	BD545197	FITTING, 3/8"NPT STREET TEE,	2	EA
13	BD515245	HOSE, 1/2" PUSH LOCK BLACK	24	FT (NOT SHOWN)
14	BD515238	FITTING 3/8 STREET ELBOW HP	1	EA
15	BD500105	HYDROCART ELECTRIC FLOW REGUL	1	EA
16	BD515058	FITTING, 1/2" NPT 90° STREET	2	EA
17	BD515139	FITTING, 1/2-M X 1/4-F REDUCER	1	EA
18	BD515074	VALVE,1/2" F-NPT X 1/2" F-NPT	1	EA
19	BD515221	FITTING, 1/2" NPT-M X 3/4" GH	2	EA
20	BD515264	U-BOLT, FOR 1-1/8" TUBE, 14-20	3	EA (NOT SHOWN)
21	BD555048	TACHOMETER/HOUR METER WITH	1	EA (NOT SHOWN)
22	BD515231	FITTING 1/2 M-NPT X 1/2 PUSH	7	EA
23	BD515258	FITTING 90° 1/2" HB X 1/2" NPT	1	EA (NOT SHOWN)
24	HRCH	10 FT HOSE TO HYDROCART	1	EA (NOT SHOWN)
25	BD515266	FITTING 3/8 NPT X 1/2 HB PUSH	3	EA
26	BD515265	FITTING 3/8" NPT X 1/2 HB 90°	2	EA
27	BD515244	FITTING, 3/4 M-NPT X 1/2" PUSH	3	EA
28	BD515260	FITTING, 1/2 NPT SOCKET HEX	1	EA (NOT SHOWN)
29	BD545011	FITTING 1/4" NPT HEX HEAD PLUG	1	EA (NOT SHOWN)
30	BD411505	BOLT, 5/16-18X3/4" HHCS	4	EA (NOT SHOWN)
31	BD411509	BOLT, 5/16-18X1" HHCS	4	EA (NOT SHOWN)
32	BD432001	WASHER, 5/16" USS FLAT, BRIGHT	18	EA (NOT SHOWN)
33	BD442000	NUT, 5/16-18 NYLOCK, BRIGHT	7	EA (NOT SHOWN)

Item Number	Part Number	Description	Qty	U/M
34	BD411513	BOLT, 5/16-18X1.5" HHCS	4	EA (NOT SHOWN)
35	BD515225	U-BOLT 1/4-20 X 1" TUBE	3	EA (NOT SHOWN)
36	BD441000	NUT, 1/4-20 NYLOCK, BRIGHT ZIN	10	EA (NOT SHOWN)
37	BD515126	FITTING, 1/2 NPT-M X 3/8 NPT-M	1	EA
38	BD500117	DI FILTER, HYDRO CART	1	EA (NOT SHOWN)
39	BD555081	CHEMICAL INJECTOR HS1	1	EA (NOT SHOWN)
40	BD555082	CHEMICAL INJ. INLET HOSE	1	EA (NOT SHOWN)
41	BD515090	FILTER WRENCH, SEDIMENT/CARBON	1	EA (NOT SHOWN)
42	BD545179	TDS METER	1	EA (NOT SHOWN)
43	BD515153	MAGIC LUBE	1	EA (NOT SHOWN)
44	BD515079	CAP GH FITTING	1	EA (NOT SHOWN)
45	BD515125	FITTING, 1/2" NPT FEMALE TEE	2	EA
46	BD515089	FITTING, 1/2" NPT-M CLOSE	1	EA (NOT SHOWN))
47	BD505100	WATER METER, ADAPTER FITTING	2	EA
48	BD515155	EAGLE FLOW METER, 1/2" COLD	1	EA
49	BD515157	FITTING, 1/2 NPT-F X 3/4 NPT-M	1	EA
50	BD505217	HOSE ASSEMBLY, PUMP DISCHARGE	1	EA (NOT SHOWN)
51	BD515114	FITTING, 1/2" NPT MALE HEX	1	EA (NOT SHOWN)
52	BD515262	FITTING, 3/8" NPT FEMALE COUPL	2	EA (NOT SHOWN)
53	BD515285	FITTING, 3/8" NPT X 5-1/2 LONG	1	EA
54	BD515165	1/2" SEALING GASKET RING	4	EA (NOT SHOWN)
55	BD515118	FITTING, 1/2" NPT FEMALE ELBOW	2	EA
56	BD555120	FILTER HOUSING SS 4.5 X 10 HP	1	EA
57	BD555121	FILTER 4.5 X 10 RADIAL CARBON	1	EA (NOT SHOWN)
58	BD515287	FITTING, 1/2" BRASS HB TEE	2	EA (NOT SHOWN)
59	BD515246	HOSE CLAMP, PINCH 45/64 ID	6	EA (NOT SHOWN)
60	BD555116	MOUNT CENTER MANIFOLD RAME	1	EA (NOT SHOWN)
61	BD555117	MOUNT MANIFOLD END HS FRAME	2	EA (NOT SHOWN)
62	BD515288	FITTING 1/2 F-NPT X 1" M-NPT	2	EA
63	BD555084	HOSE, HP HOSE REEL INLET	1	EA (NOT SHOWN)
64	BD412511	BOLT 3/8-16X1.25" HHCS	4	EA (NOT SHOWN)
65	BD433000	WASHER. 3/8" SAE FLAT, BRIGHT	8	EA (NOT SHOWN)

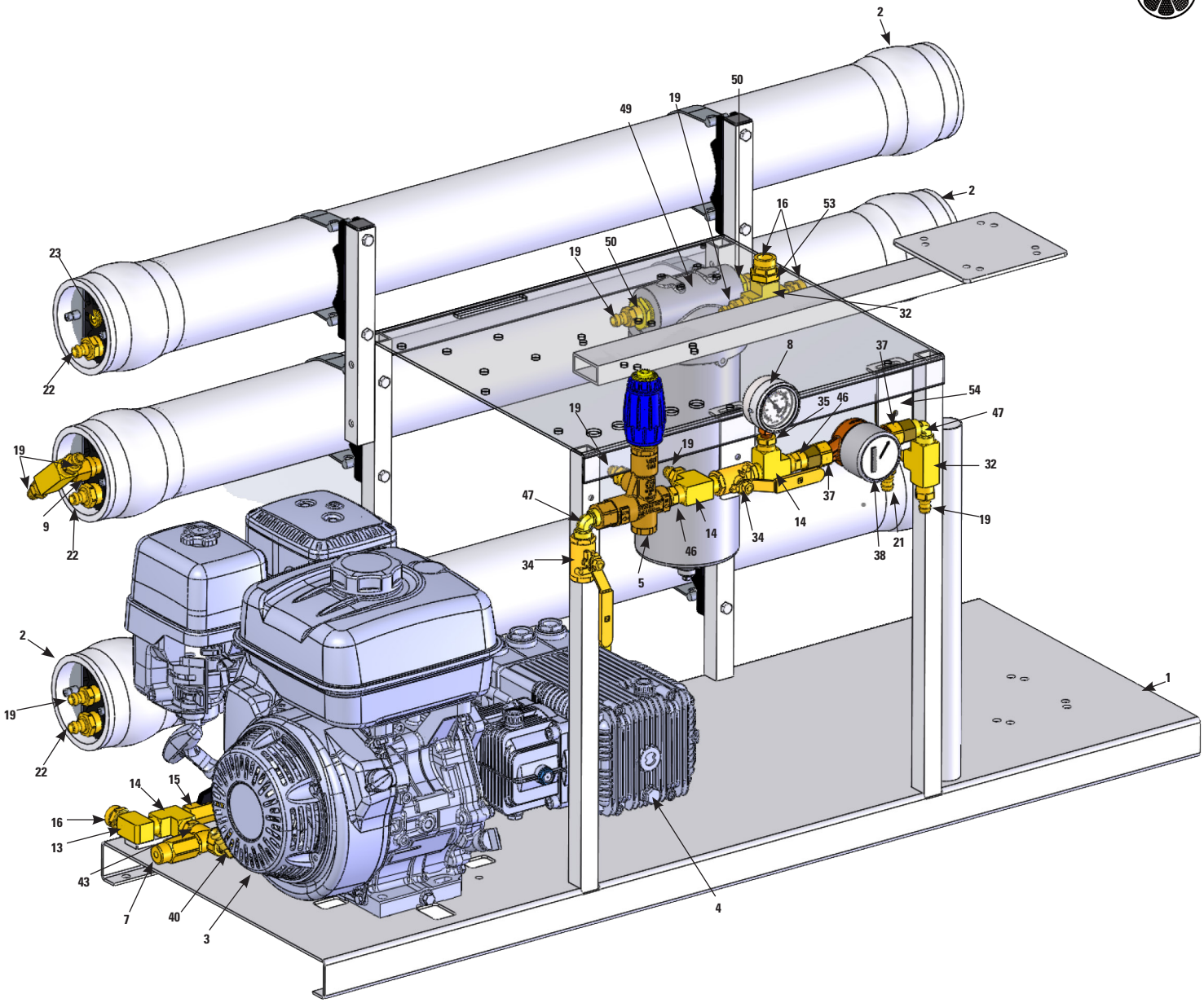
HS2 Bill of Materials



Item Number	Part Number	Description	Qty	U/M
1	BD555115	FRAME, HYDRO STATION VERSION 2	1	EA
2	BD555034	FIBERGLASS PRESSURE VESSEL4X40	2	EA
3	BD555098	ENGINE, HS2 & HS3, 9HP	1	EA
4	BD555099	PUMP, HS2 & HS3 SYSTEMS	1	EA
5	BD555100	UNLOADER VALVE HS2 & HS3	1	EA
6	BD545132	RO MEMBRANE HYDROTUBE	2	EA (Not Shown)
7	BD515123	BALANCED RELIEF VALVE 3 PORT	1	EA
8	BD515240	PRESSURE GAUGE 0-300 LIQUID FI	1	EA
9	BD515220	CHECK VALVE, 1/2" NPT MALE	2	EA
10	BD555081	CHEMICAL INJECTOR	1	EA (Not Shown)
11	BD555082	CHEMICAL INJECTOR HOSE	1	EA (Not Shown)
12	BD515245	HOSE, 1/2" PUSH LOCK BLACK	36FT	(Not Shown)
13	BD515058	FITTING, 1/2" NPT 90° STREET	1	EA
14	BD515121	FITTING, 1/2" NPT STREET TEE	3	EA
15	BD515074	VALVE,1/2" F-NPT X 1/2" F-NPT	1	EA
16	BD515221	FITTING, 1/2" NPT-M X 3/4" GH	3	EA
17	BD515264	U-BOLT, FOR 1-1/8" TUBE, 14-20	2	EA(Not Shown)
18	BD555048	TACHOMETER/HOUR METER WITH	1	EA(Not Shown)
19	BD515231	FITTING 1/2 M-NPT X 1/2 PUSH	7	EA
20	BD515258	FITTING 90° 1/2" HB X 1/2" NPT	2	EA (Not Shown)
21	BD515266	FITTING 3/8 NPT X 1/2 HB PUSH	2	EA (Not Shown)
22	BD515244	FITTING, 3/4 M-NPT X 1/2" PUSH	4	EA
23	BD515260	FITTING, 1/2 NPT SOCKET HEX	2	EA
24	BD411515	BOLT, 5/16-18X 1-3/4" HHCS	4	EA (Not Shown)
25	BD432001	WASHER, 5/16" USS FLAT, BRIGHT	12	EA (Not Shown)
26	BD442000	NUT, 5/16-18 NYLOCK, BRIGHT	6	EA (Not Shown)
27	BD411505	BOLT, 5/16-18X 3/4" HHCS	2	EA (Not Shown)
28	BD515276	U-BOLT 1-3/4" OD TUBE X 1/4-20	1	EA (Not Shown)
29	BD441000	NUT, 1/4-20 NYLOCK, BRIGHT ZIN	10	EA (Not Shown)
30	BD431000	WASHER, 1/4" SAE FLAT	10	EA (Not Shown)

Item Number	Part Number	Description	Qty	U/M
31	BD515225	U-BOLT 1" OD TUBE X 1/4-20	2	EA (Not Shown)
32	BD515125	FITTING, 1/2" NPT FEMALE TEE	1	EA
33	BD515067	FITTING, 3/4 M-NPT X 3/4 F-GH	1	EA (Not Shown)
34	BD515235	BALL VALVE, 1/2" F-NPT BRASS	2	EA
35	BD515139	FITTING, 1/2 M-NPT X 1/4 F-NPT BUSH	1	EA
36	BD545114	RELIEF VALVE, 2 PORT	1	EA
37	BD505100	WATER METER, ADAPTER FITTING	2	EA
38	BD515155	EAGLE FLOW METER, 1/2" COLD	1	EA
39	BD505217	HOSE ASSEMBLY, PUMP DISCHARGE	1	EA (Not Shown)
40	BD515265	FITTING, 3/8 NPT 90° ELBOW X 1/2 PUSH	1	EA
41	BD505103	RETAINER FOR HYDROCART	1	EA(Not Shown)
42	BD515162	BY-PASS HOSE REGULATOR	1	EA(Not Shown)
43	BD515126	FITTING, 1/2 NPT-M X 3/8 NPT-M	2	EA
44	BD515118	FITTING, 1/2 NPT 90° FEMALE ELBOW	1	EA(Not Shown)
45	BD505012	WASHER, SEAL	2	EA(Not Shown)
46	BD515114	FITTING, 1/2" NPT MALE HEX	3	EA
47	BD515070	FITTING, 1/2" NPT-M 90° ELBOW	2	EA
48	BD515248	FITTING, REDUCER BUSHING 1/2 M	2	EA(Not Shown)
49	BD515059	FITTING, 1/2 NPT BRASS CROSS	1	EA
50	BD555120	FILTER HOUSING SS 4.5 X 10 HP	1	EA
51	BD515288	FITTING 1/2 F-NPT X 1" M-NPT	2	EA
52	BD515287	FITTING 1/2" BRASS HB TEE	1	EA(Not Shown)
53	BD515246	HOSE CLAMP, PINCH 45/64 ID	3	EA Not Shown)
54	BD515142	LOCK RING 1/2"	1	EA
55	BD555123	BRACKET MANIFOLD MOUNT HS2-3	2	EA
56	BD545179	TDS METER	1	EA (Not Shown)
57	BD515153	MAGIC LUBE	1	EA (Not Shown)
58	BD555121	FILTER 4.5 X 10 RADIAL CARBON	1	EA (Not Shown)
59	HRCH	10 FT HOSE TO HYDROCART	1	EA(Not Shown)

HS3 Bill of Materials



Item Number	Part Number	Description	Qty	U/M
1	BD555115	FRAME, HYDRO STATION VERSION 2	1	EA
2	BD555034	FIBERGLASS PRESSURE VESSEL4X40	3	EA
3	BD555098	ENGINE, HS2 & HS3, 9HP	1	EA
4	BD555099	PUMP, HS2 & HS3 SYSTEMS	1	EA
5	BD555100	UNLOADER VALVE HS2 & HS3	1	EA
6	BD545132	RO MEMBRANE HYDROTUBE	3	EA (Not Shown)
7	BD515123	BALANCED RELIEF VALVE 3 PORT	1	EA
8	BD515240	PRESSURE GAUGE 0-300 LIQUID FI	1	EA
9	BD515220	CHECK VALVE, 1/2" NPT MALE	3	EA
10	BD555081	CHEMICAL INJECTOR	1	EA (Not Shown)
11	BD555082	CHEMICAL INJECTOR HOSE	1	EA (Not Shown)
12	BD515245	HOSE, 1/2" PUSH LOCK BLACK	45	FT (Not Shown)
13	BD515058	FITTING, 1/2" NPT 90° STREET	1	EA
14	BD515121	FITTING, 1/2" NPT STREET TEE	3	EA
15	BD515074	VALVE,1/2" F-NPT X 1/2" F-NPT	1	EA
16	BD515221	FITTING, 1/2" NPT-M X 3/4" GH	3	EA
17	BD515264	U-BOLT, FOR 1-1/8" TUBE, 14-20	2	EA (Not Shown)
18	BD555048	TACHOMETER/HOUR METER WITH	1	EA (Not Shown)
19	BD515231	FITTING 1/2 M-NPT X 1/2 PUSH	8	EA
20	BD515258	FITTING 90° 1/2" HB X 1/2" NPT	1	EA (Not Shown)
21	BD515266	FITTING 3/8 NPT X 1/2 HB PUSH	2	EA (Not Shown)
22	BD515244	FITTING, 3/4 M-NPT X 1/2" PUSH	6	EA
23	BD515260	FITTING, 1/2 NPT SOCKET HEX	3	EA
24	BD411515	BOLT, 5/16-18X 1-3/4" HHCS	4	EA (Not Shown)
25	BD432001	WASHER, 5/16" USS FLAT, BRIGHT	20	EA (Not Shown)
26	BD442000	NUT, 5/16-18 NYLOCK, BRIGHT	10	EA (Not Shown)
27	BD411505	BOLT, 5/16-18X 3/4" HHCS	2	EA (Not Shown)
28	BD515276	U-BOLT 1-3/4" OD TUBE X 1/4-20	1	EA (Not Shown)
29	BD441000	NUT, 1/4-20 NYLOCK, BRIGHT ZIN	10	EA (Not Shown)

Item Number	Part Number	Description	Qty	U/M
30	BD431000	WASHER, 1/4" SAE FLAT	10	EA (Not Shown)
31	BD515225	U-BOLT 1" OD TUBE X 1/4-20	2	EA (Not Shown)
32	BD515125	FITTING, 1/2" NPT FEMALE TEE	1	EA
33	BD515067	FITTING, 3/4 M-NPT X 3/4 F-GH	1	EA (Not Shown)
34	BD515235	BALL VALVE, 1/2" F-NPT BRASS	2	EA
35	BD515139	FITTING, 1/2 M-NPT X 1/4 F-NPT BUSH	1	EA
36	BD545114	RELIEF VALVE, 2 PORT	1	EA (Not Shown)
37	BD505100	WATER METER, ADAPTER FITTING	2	EA
38	BD515155	EAGLE FLOW METER, 1/2" COLD	1	EA
39	BD505217	HOSE ASSEMBLY, PUMP DISCHARGE	1	EA (Not Shown)
40	BD515265	FITTING, 3/8 NPT 90° ELBOW X 1/2 PUSH	1	EA
41	BD505103	RETAINER FOR HYDROCART	1	EA (Not Shown)
42	BD515162	BY-PASS HOSE REGULATOR	1	EA (Not Shown)
43	BD515126	FITTING, 1/2 NPT-M X 3/8 NPT-M	2	EA
44	BD411521	BOLT, 5/16-18 X 2-1/2" HHCS	4	EA (Not Shown)
45	BD505012	WASHER, SEAL	2	EA (Not Shown)
46	BD515114	FITTING, 1/2" NPT MALE HEX	2	EA
47	BD515070	FITTING, 1/2" NPT-M 90° ELBOW	2	EA
48	BD515248	FITTING, REDUCER BUSHING 1/2 M	2	EA (Not Shown)
49	BD555120	FILTER HOUSING SS 4.5 X 10 HP	1	EA
50	BD515288	FITTING 1/2 F-NPT X 1" M-NPT	2	EA
51	BD515287	FITTING 1/2" BRASS HB TEE	8	EA (Not Shown)
52	BD515246	HOSE CLAMP, PINCH 45/64 ID	24	EA (Not Shown)
53	BD515142	LOCK RING 1/2"	1	EA
54	BD555123	BRACKET MANIFOLD MOUNT HS2-3	2	EA
55	BD545179	TDS METER	1	EA (Not Shown)
56	BD515153	MAGIC LUBE	1	EA (Not Shown)
57	BD555121	FILTER 4.5 X 10 RADIAL CARBON	1	EA (Not Shown)
58	HRCH	10 FT HOSE TO HYDROCART	1	EA (Not Shown)

IPC Eagle Warranty Policy

Limited Warranty
IPC Eagle warrants new cleaning equipment against defects in material and workmanship under normal use and service to the original purchaser as detailed below.

1 year
Subject to the conditions stated below, IPC Eagle warrants all other cleaning equipment components to be free from defects in materials and workmanship for a 1-year period. Parts replaced or repaired are warranted for the remainder of the original warranty period. Batteries are pro-rated for one year.

IPC Eagle will furnish and charge for replacement parts, including transportation, to the original owner through an IPC Eagle authorized service center. If the part is returned within 30 days and is found defective, the owner will be credited for the cost of the replacement part including shipping and handling.

Wear items exempt from warranty include hoses, fittings, valves, filters and membranes.

This warranty shall not apply to failures caused by misuse or abuse, improper maintenance as stated in the operation manuals, use of unauthorized repair parts, repairs by other than an IPC Eagle authorized service center, and damage in transit.

IPC Eagle disclaims and denies any liability for any direct, indirect, special incidental or consequential damage which may be suffered as a result of sale, delivery, servicing, use, loss of any product, downtime, labor, freight, or other charges not expressly included herein.

Purchase Date_____

Purchased From:_____

*Please retain this manual in a safe place for future reference.

See our full line of window cleaning products!

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